In the Claims:

Please enter the claim amendments as shown. The claim listing is as follows, replacing all previously presented listings.

1. (Previously presented)   A fuzzy distance transform-based computational method for analyzing digital images defining a volumetric region of an object from an image comprising: (a) obtaining an image of the targeted object; (b) finding a plurality of points in the image to generate a fuzzy subset and calculating a fuzzy distance transform (FDT) of the fuzzy subset; and (c) compiling a report or revised image based upon the FDT calculations.

2. (Original) The method of claim 1, wherein the calculating step comprises assigning to a point in the fuzzy subset its respective fuzzy distance from a complement of a support of the fuzzy subset.

3. (Original) The method of claim 2, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

4. (Original) The method of claim 3, wherein the FDT is in digital cubic space.

5. (Currently Amended)   The method of claim 3, further comprising a step of sampling FDT values along ~~the~~ a medial axis of the support of the fuzzy subset to estimate regional target object thickness distribution.

6. (Original) The method of claim 5, wherein the target object comprises bone marrow space, cortical bone, blood vessels or lung airways.

7. (Original) The method of claim 5, wherein FDT is computed in digital cubic space of resolution of target object thickness or smaller.

8. (Original) The method of claim 7, wherein the target object is in or from an animal or human subject.

9. (Original) The method of claim 8, wherein the image is obtained by magnetic resonance or computed tomography.

10. (Currently Amended)   The method of claim ~~4~~ 1, whereby FDT values are sampled along a medial axis directly computed from the fuzzy subset.

11. (Original) The method of claim 10, wherein the FDT is in digital cubic space.

12. (Original) The method of claim 11, wherein the target object comprises bone marrow space, cortical bone, blood vessels or lung airways.

13. (Original) The method of claim 11, wherein FDT is computed in digital cubic space of resolution of target object thickness or smaller.

14. (Previously presented) The method of claim 13, wherein the targeted object is in or from an animal or human subject.

15. (Original) The method of claim 14, wherein the image is obtained by magnetic resonance or computed tomography.

16. (Original) The method of claim 3, further comprising applying one or more additional steps consisting of skeletonizing, feature extracting; analyzing morphological or shape-based object, computing regional object depth; calculating average or regional object thickness distribution; and local scaling.

17. (Previously presented) A fuzzy distance transform-based computational method for evaluating or diagnosing bone disease in a subject by analyzing digital images defining at least one volumetric region of bone from or in the subject, the method comprising: (a) obtaining an image of targeted bone region; (b) finding a plurality of points in the image to generate a fuzzy subset and calculating a fuzzy distance transform (FDT) of the fuzzy subset; and (c) compiling a report or revised image based upon the FDT calculations.

18. (Original) The method of claim 17, wherein the calculating step comprises assigning to a point in the fuzzy subset its respective fuzzy distance from a complement of a support of the fuzzy subset.

19. (Original) The method of claim 18, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

20. (Original) The method of claim 19, wherein the FDT is in digital cubic space.

21. (Currently Amended) The method of claim 19, further comprising a step of sampling FDT values along ~~the~~ a medial axis of the support of the fuzzy subset to estimate regional target object thickness distribution.

22. (Previously presented) The method of claim 17, further comprising selecting a therapy based on the diagnosis or evaluation of bone disease in the subject.

23. (Previously presented)   The method of claim 22, further comprising administering said therapy to the subject.

24. (Previously presented)   The method of claim 23, wherein the evaluation further comprises monitoring a progression or regression of bone disease in the subject, during or at one or more times after administering the selected therapy.

25. (Currently Amended)   A computer readable medium encoded with computer readable instructions for computing a dynamic programming-based algorithm ~~operating on a computer~~ to compute fuzzy distance transform (FDT) by means of a plurality of points in ~~an~~ a digital image of a target object used to generate a fuzzy subset ~~on computer readable medium~~, and to calculate the FDT of the fuzzy subset, the FDT terminating in a finite number of steps, thereby calculating structural thickness of an object from the digital image.

26. (Currently Amended)   The computer readable medium ~~algorithm operating on a computer~~ of claim 25, further comprising a means for assigning to a point in the fuzzy subset its respective fuzzy distance from a complement of a support of the fuzzy subset.

27. (Currently Amended)   The computer readable medium ~~algorithm operating on a computer~~ of claim 26, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

28. (Currently Amended)   The computer readable medium ~~algorithm operating on a computer~~ of claim 27, wherein the FDT is in digital cubic space.

29. (Currently Amended)   A ~~computer-based~~ system for analyzing digital images by a fuzzy distance transform-based computational method comprising:

> a means for obtaining an image of a target object a means for defining a volumetric region of an object from the image;
>
> a means for finding a plurality of points in the image to generate a fuzzy subset;
>
> a means for calculating a fuzzy distance transform (FDT) of the fuzzy subset; and
>
> means for reporting same or for providing a revised image based upon the FDT calculations.

30. (Currently Amended)   A ~~computer-based device~~ <u>computer readable medium encoded with computer readable instructions</u> for analyzing <u>a</u> digital images by a fuzzy distance transform-based computational method comprising:

a computer-readable ~~signal-bearing~~ medium;

      means in the medium for acquiring or reading ~~a 3D~~ <u>the digital</u> image of at least one volumetric region of a target object;

      means in the medium for identifying a plurality of points in the image to generate a fuzzy subset; and

      means in the medium for calculating <u>a</u> fuzzy distance transform (FDT) of the fuzzy subset<u>, thereby calculating structural thickness of an object of the digital image.</u>